REMARKS

The Applicant has reviewed the Examiner's Office Action dated October 8, 2003. The Applicant has amended claims 1, 10, 12, and 15. The Applicant hereby provides the following remarks concerning the Examiner's rejection of the claims under 35 U.S.C. 103(a).

The drawings in the application are objected to by the Draftsperson as informal. The Applicant does not understand the Examiner's comments concerning drawing corrections requested but not made in the prior application since there is no prior application. Clarification is hereby requested. The Applicant will submit formal drawings when a notice of allowance is received.

The Examiner has rejected claims 1-15 under 35 U.S.C. 103(a) as being unpatentable over Bernard Sklar, DIGITAL COMMUNCIATIONS Fundamentals and Applications dated 1988.

Referring to claim 1, the Examiner asserts Sklar teaches: A method of obtaining coarse synchronization in a frequency hopped/direct sequence spread spectrum (FH/DSS) time division multiple access (TDMA) data link network (Fig 10.20 Pg 567), the method comprising:

Tuning a first receiver to a first frequency out of a plurality of frequencies used in the data link network (output of Frequency Hopper per Fig 10.20 Pg 567)

Observing signal strength of signals received on a first frequency during a sample time period to obtain a sample energy pattern (output of Integrator per Fig 10.20 Pg 567)

Determining an expected energy pattern corresponding to a time uncertainty window, the expected energy pattern based upon a known hopping pattern (The Integrator integrates a time interval or uncertainty time window in which the output is Threshold tested per Fig 10.20 Pg 567)

Comparing the sample energy pattern to a first portion of the expected energy pattern, the first portion of the expected energy pattern corresponding to a first time period within the time uncertainty window (Comparator per Fig 10.20 Pg 567)

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Determining whether the first time period is a coarse synchronization candidate as a function of the comparison between the sample energy pattern and the first portion of the expected energy (Search Control per Fig 10.20 Pg 567)

Regarding the Examiner's rejection of the claims over Sklar, the Sklar reference merely teaches well known text book information on spread spectrum, is very much like the references cited by the Applicant in the Background of the Invention, and could very well have been included therein. The Sklar reference simply does not teach the Applicant's invention for a rapid coarse synchronization technique.

What is shown in Figure 10.20 of Sklar is a frequency hopping serial search acquisition scheme that has the long coarse acquisition times that the Applicant's invention reduces by one or two orders of magnitude. In Figure 10.20 a received FH signal is mixed in a mixer with an injection hop pattern from a frequency hopper. The received FH signal and the frequency hopper have the same hop pattern but are initially misaligned or unsynchronized. The frequency hopper is controlled by a PN code generator that generates the hop pattern, is driven by a clock, and adjusted by the search control to perform a serial search. When there is no alignment between the received FH signal and the frequency hopper hop pattern, there is no output from the mixer to the band pass filter and the rest of the circuit. Under these conditions, the search control moves the PN code generator to search over an uncertainty region. When the locally generated frequency hopping pattern from the frequency hopper starts to align with the received FH signal, the output from the mixer starts to increase, causing an IF signal at a single frequency to appear in the BPF where the IF signal is filtered, passed to a square-law or envelope detector such as a diode that provides a detected DC signal level, integrator that filters the detected signal, and a comparator that compares the DC signal level to a threshold. If the signal is below the threshold, the acquisition indication is not activated and the search control continues to move the PN code generator until alignment of the received FH signal with the frequency hopper output signal is sufficient for the detected and integrated DC level exceeds the threshold. When the threshold is exceeded, the acquisition indication signal

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indicates acquisition and the search control stops moving the PN code generator. When the received FH signal and the frequency hopper output are in perfect alignment, the output from the mixer is a single frequency signal that is filtered, detected, and integrated indicating a correlation peak.

In Applicant's invention a receiver is tuned to a first frequency in the frequency hopping sequence for a sample time period that is much longer than a single frequency hop dwell, as shown in Figure 4A. The sample time period is not a frequency hop dwell. In Figure 4A the Tsample period includes 15 dwells at the first frequency and many others (not shown) at other frequencies in the hop sequence that are not used in the sample. The Tsample period may be as long as 0.25 seconds as described in the specification. In Sklar the receiver is tuned to a first frequency for only one hop dwell and then moves to another frequency for another hop dwell. The received FH signal and the frequency hopper output are compared over a frequency hop sequence or "each possible sequence shift" (see top of page 566 line 2). There is no sample time period in Sklar as in Applicant's invention. The search dwell time λT_c for the DS system in Figure 10.19 is over λ chips with each chip being T_c wide. In Applicant's invention, the signal strengths of multiple hops on a single first frequency are observed over the sample period as shown in Figure 4A. These signal strengths are individually observed at specific times for a specific pattern and not integrated or averaged. In Sklar the output from the integrator is an average value over all the hop frequencies in the frequency hopping pattern ("each possible sequence shift" see top of page 566 line 2) and not of individual signals at a single first frequency over the sample period.

In Applicant's invention an expected energy pattern on the first frequency over a time uncertainty window based on a known hopping pattern is determined. This is shown in Figure 5 as a number of hops at the single first frequency over a time uncertainty window that may be several seconds long. There is no such expected energy pattern at a single frequency over a time uncertainty window disclosed in Sklar. Furthermore the Examiner is now asserting that the integrator integrates over the time interval or uncertainty time window whereas before the

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Examiner asserted that the integrator integrates the observed signal strength over a sample time period. Which is it? Clarification is hereby requested by the Applicant.

In Applicant's invention the sampled energy pattern is compared to a first portion of the expected energy pattern within the time uncertainty window. Sklar does not disclose a sampled energy pattern at a single first frequency, does not disclose an expected energy pattern at a single first frequency, and certainly does not disclose comparing the two. The comparator in Sklar simply compares a fixed threshold level to a DC level out of the integrator corresponding to a filtered, detected, and integrated IF signal.

In Applicant's invention, the first time period is determined to be a coarse sync candidate from the comparison above. There is no such determination in Sklar. The search control merely starts and stops the PN code generator search as determined by the comparator comparing the integrator output to the threshold.

As can be seen from the above remarks, Sklar merely discloses what is well known in the art of frequency hopping and does not teach, suggest, disclose, or make obvious the Applicant's invention. The Applicant has amended claim 1 to further emphasize performing coarse synchronization on the first frequency. Claim 1 is allowable over Sklar.

Regarding claim 2, the Examiner states that wherein observing signal strength of signals received on the first frequency during the sample time period to obtain the sample energy pattern further comprises: Obtaining a received energy pattern by observing the signal strength of signals received on the first frequency during the sample time period; comparing the received energy pattern to a threshold; and obtaining the sample energy pattern by eliminating energy components from the received energy pattern which do not exceed the threshold (The Examiner thinks that "eliminating energy components from the received energy pattern which do not exceed the threshold" has a broad meaning. If received signal which is threshold does not meet the threshold testing per Fig 10.20 Pg 567 then it is eliminated and the serial acquisition is repeated until a candidate is found per Para 10.5.1.2 per Pgs 565-569)

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Regarding claim 2, the Applicant hereby requests that the Examiner explain why "eliminating energy components that do not exceed the threshold" has a broad meaning. Would "using components that exceed the threshold" be narrower? If so the Applicant can amend claim 2 to so claim.

Further regarding claim 2, in Applicant's invention energy components at a single first frequency that exceed a threshold in a sample period Tsample are used as a sample energy pattern as shown in Figure 4B and 4C of the present application. As discussed above Sklar does not disclose a sample period as disclosed by the Applicant and does not disclose a threshold above which signals at a first frequency in a hop pattern are used in the sample period. In Sklar when the average of all frequency hopping signals at all frequencies (see top of page 566 line 2) exceeds a threshold serial acquisition is complete, or in the negative if the average of all signals does not meet the threshold the serial acquisition is repeated. Claim 2 is allowable.

Regarding claim 3, the Examiner states wherein the first time period corresponds to a first plurality of time slots used in the data link network and which fall within the time uncertainty window, and wherein determining the expected energy pattern further comprises determining the first portion of the expected energy pattern based upon an expected hopping pattern for the first plurality of time slots (The Integrator per Fig 10.20 Pg 567 utilizes an integration time or uncertainty time window which is based upon search dwell time as well as probability of detection per search dwell time as well as probability of detection per Para 10.5.1.2 pgs 565-568.)

Regarding claim 3, the Examiner is making assumptions concerning Sklar that are simply not there. The Applicant does not see where in Sklar the integration time or uncertainty time window is based on a search dwell time as well as a probability of detection for a FH system. The discussion below Figure 10.19 on page 566 pertains to a DS system. There is no discussion or indication of what the integration time of the integrator in Figure 10.20 might be. The Applicant respectfully requests that the Examiner show specifically where this asserted disclosure occurs in Sklar for a FH system. Furthermore, the Applicant does not

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see where in Sklar time slots of a TDMA network are disclosed as shown in Figure 3A of the present application. The Applicant respectfully requests that the Examiner show specifically where this asserted disclosure of time slots occurs in Sklar. Claim 3 is allowable.

Regarding claim 4, the Examiner states that wherein the sample period has a duration which is substantially equal to the first time period which fall within the time uncertainty window ("substantially" has a broad meaning. The Integrator per Fig 10.20 Pg 567 utilizes an integration time or uncertainty time window which is based upon search dwell time as well as probability of detection per Para 10.5.1.2 pgs 565-568. The Examiner believes that it is within the level of one skilled in the art to adjust parameters. The integrator time period can be adjusted based upon search dwell time as well as probability of detection per Para 10.5.1.2 pgs 565-568.)

As discussed above, Sklar does not disclose a sample period at a single first frequency. Furthermore, the Applicant fails to see where the integrator time period is discussed for the integrator in Figure 10.20. Claim 4 is allowable.

Regarding claim 5, the Examiner states wherein determining whether the first time period is a coarse synchronization candidate further comprises determining whether the sample energy pattern and the first portion of the expected energy pattern are substantially a match (the Examiner asserts that "substantially match" has a broad meaning and that the function shown in Figure 10.20 per Pg 567 determines if there is a "substantial match" based threshold which is calculated based upon probability of detection and dwell time per Para 10.5.1.2 pgs 565-568.)

As discussed above Sklar does not disclose a sample time period at a first frequency that is compared to the first portion of the expected energy pattern at the first frequency. Claim 5 is allowable.

Regarding claim 6, the Examiner states and if the first time period is determined to not be a coarse synchronization candidate (the Examiner believes that "Coarse synchronization" has a broad meaning and that the frequency hopper

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per Fig 10.20 per Pg 567 provides coarse synchronization), then further comprising:

comparing the sample energy pattern to a next portion of the expected energy pattern, the next portion of the expected energy pattern corresponding to a next time period within the time uncertainty window (The process of Serial Acquisition is repeated until a candidate is found per Para 10.5.1.2 Pgs 565-568); and

determining whether the next time period is a coarse synchronization candidate as a function of the comparison between the sample energy pattern and the next portion of the expected energy pattern (The process of Serial Acquisition is repeated until a candidate is found per Para 10.5.1.2 Pgs 565-568).

Regarding claim 6, the Examiner is respectfully asked to explain why "Coarse synchronization" has broad meaning. As discussed above Sklar does not disclose a sample energy pattern at a first frequency and does not disclose a first time period at the first frequency. Claim 6 is allowable.

Regarding claim 7, the Examiner states that and further comprising sequentially repeating, for subsequent time periods within the time uncertainty window until a coarse synchronization candidate is found, the step of comparing the sample energy pattern to the next portion of the expected energy pattern, and the step of determining whether the next time period is a coarse synchronization candidate as a function of the comparison (The Examiner believes that the process of Serial Acquisition is repeated until a candidate is found per Para 10.5.1.2 Pgs 565-568);.

Sklar does not disclose the sample energy pattern and the expected energy pattern being at the first frequency. Claim 7 is believed to be allowable.

Regarding claim 8, the Examiner states that and after a coarse synchronization candidate (The Frequency Hopper output per Fig. 10.20 per Pg 567 can be adjusted for both fine and coarse synchronization) is found further comprising:

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Tuning the first receiver to a second frequency out of the plurality of frequencies used in the data link network (The Examiner believes that the Tracker described per Pgs 568-570 provides input into the Frequency Hopper per Fig 10.20 Pg 567 to fine tune for a second frequency);

Observing signal strength of signals received on the second frequency during a second sample time period to obtain a second sample energy pattern (The Examiner believes that the Tracker described per Pgs 568-570 provides input into the Frequency Hopper per Fig 10.20 Pg 567 to fine tune for a second frequency as well as obtain a second energy pattern).

Determining a second expected energy pattern during a time period corresponding to the second sample time period, using the coarse synchronization candidate as a reference time, based upon the known hopping pattern (The Examiner believes that the Integrator integrates a time interval or uncertainty time window in which the output is Threshold tested per Fig 10.20 Pg 567)

Comparing the second sample energy pattern to the second expected energy pattern corresponding to the second sample time period (Comparator per Fig 10.20 Pg 567); and

Verifying the accuracy of the coarse synchronization candidate based upon the comparison between the second sample energy pattern and the expected energy pattern (Search Control per Fig 10.20 Pg 567)

Regarding the Examiner's rejection of claim 8, the Examiner is respectfully asked to show where in Sklar it is disclosed that the frequency hopper can be adjusted for both fine and coarse synchronization. Further regarding claim 8, Sklar does not disclose a sample period at a second frequency in the frequency hopping sequence as claimed by the Applicant. The Tracker in Sklar is for fine tuning and has nothing to do with verifying coarse synchronization by comparison

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of the second sample period at the second frequency to a second sample energy pattern at the second frequency. The integrator in Sklar integrates over an unspecified time interval. The comparator in Sklar compares a threshold level to a filtered, detected, and integrated output. There is no comparison of the second sample energy pattern to the second sample time period. The search control does not verifying the accuracy of the comparison. The search control increments the PN code generator (see page 566 lines 8-12). Claim 8 is allowable.

Regarding claim 9, the Examiner states and further comprising:

Tuning each of a plurality of other receivers to different one of a plurality of other frequencies (Fig 10.17 Pg 564)

Observing signal strength of signals received on each of the plurality of other frequencies during the sample time period to obtain a plurality of other sample energy patterns (Fig 10.17 Pg 564)

Determining a plurality of other expected energy patterns corresponding to the time uncertainty window, each of the plurality of other expected energy patterns being based upon a known hopping pattern and upon a corresponding one of the plurality of other frequencies (Fig 10.17 Pg 564)

Comparing each of the plurality of other sample energy patterns to a first portion of the corresponding one of the plurality of other expected energy patterns, the first portion of each of the plurality of other expected energy patterns corresponding to a time period within the time uncertainty window (Fig 10.17 Pg 564)

Determining whether the time period within the time uncertainty window is a coarse synchronization candidate as a function of the comparisons (Fig 10.17 Pg 564)

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In regard to the Examiner's rejection of claim 9, the Examiner is again making incorrect assumptions concerning of what is disclosed in Sklar. The Examiner is respectfully asked to read Sklar page 563 last paragraph and the caption of Figure 10.17. From this reading the Examiner should realize that what is shown is direct sequence parallel search acquisition that has nothing to do with a plurality of other receivers in a data link network. Claim 9 is allowable over Sklar.

Regarding claim 12, the Examiner states wherein the first time period corresponds to a first plurality of time slots used in the data link network and which fall within the time uncertainty window (The Examiner assumes the Integrator per Fig 10.20 Pg 567 utilizes an integration time or uncertainty time window which is based upon search dwell time as well as probability of detection per Para 10.5.1.2 pgs 565-568. The Examiner believes that it is within the level of one skilled in the art to adjust parameters. The Integrator time period can be adjusted based upon search dwell time as well as probability of detection per Para 10.5.1.2 pgs 565-568).

The Examiner is again making assumptions concerning Sklar that are not disclosed therein. The Examiner is respectfully asked to show where in Sklar the first time period corresponds to a first plurality of time slots of a TDMA network such as disclosed in Applicant's invention. The Applicant has amended claim 12 to properly depend on claim 10. Claim 12 is allowable over Sklar.

Regarding Claim 13, the Examiner states wherein the sample period has a duration which is substantially equal to the first time period (The Examiner believes that "Substantially equal to the first time period" has a broad meaning. The Examiner thinks that the Integrator per Fig 10.20 Pg 567 utilizes an integration time or uncertainty time window which is calculated based upon search dwell time as well as probability of detection per Para 10.5.1.2 pgs 565-568.)

The Examiner then states that Sklar does not expressly call for: Determining an expected energy pattern but teaches Threshold testing. The Examiner further believes it would be obvious to one of ordinary skill in the art at

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the time of the invention that the expected energy pattern was used in the calculations that determined the threshold of Sklar.

The Examiner has rejected claims 1-15 under 35 U.S.C. 103(a). In the rejection of the claim 1 the Examiner has not presented a 103(a) argument but what appears to be a 102(b) argument. In the comments for claim 1 the Examiner states that determining an expected energy pattern is done by the Integrator that integrates a time interval or uncertainty time window in which the output is threshold tested. The Examiner is now arguing that Sklar does not expressly call for determining an expected energy pattern but teaches Threshold testing and is making an obviousness argument. The Applicant is confused and asks that the Examiner please clarify under what 35 U.S.C. paragraphs all the claim rejections are actually made so proper responses may be prepared if required.

In any event, as discussed above Sklar does not teach a sample period or a first time period as claimed by the Applicant. Claim 13 is allowable.

Referring to claim 10, the Examiner asserts that Sklar teaches: A radio for use in a frequency hopped/direct sequence spread spectrum (FH/DSS) time division multiple access (TDMA) data link network (I would be obvious that the receiver per Fig 10.20 Pg 567 be utilized as a radio because it is utilized for receiving spread spectrum), the radio comprising:

A first receiver adapted to be tuned to a first frequency out of a plurality of frequencies used in the data link network (fig 10.20 per Pg 567 or first receiver tuned to a plurality of frequencies)

Signal strength determining circuitry adapted to observe signal strength of signals received on the first frequency during a sample time period (Integrator per Fig 10.20 Pg 567 or circuitry)

Processing circuitry coupled to the signal strength determining circuitry and adapted to determine a sample energy pattern in response to the observations by the signal strength determining circuitry (Fig 10.20 Pg 567 or processing circuitry)

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The processing circuitry being further adapted to determine an expected energy pattern corresponding to a time uncertainty window (Integrator per Fig 10.20 Pg 567 or processing circuitry)

The expected energy pattern being based upon a known hopping pattern, the processing circuitry being adapted to compare the sample energy pattern to a first portion of the expected energy pattern (The Integrator integrates a time interval or uncertainty time window in which the output is tested per Fig 10.20 Pg 567 or processing circuitry)

The first portion of the expected energy pattern corresponding to a first time period within the time uncertainty window (Comparator per Fig 10.20 Pg 567)

The processing circuitry further being adapted to determine as function of the comparison whether the first time period is a coarse synchronization candidate (Search Control per Fig 10.20 Pg 567 or processing circuitry)

Regarding the Examiner's rejection of claim 10, the Examiner's admission that Sklar discloses a first receiver tuned to a plurality of frequencies is correct. In Applicant's invention a first receiver is tuned to a first frequency for a sample period, while in Sklar the receiver is tuned to the plurality of frequencies.

The Examiner's assertion regarding the signal strength determining circuitry is wrong. The integrator does not observe signals received on a first frequency but on the plurality of frequencies. The Examiner is asked to explain what is meant by "or circuitry".

The Examiner's assertions regarding the processing circuitry are wrong. Sklar does not disclose a sample energy pattern at the first frequency, an expected energy pattern at the first frequency, comparing the sample energy pattern a first portion of the expected energy pattern. The integrator compares the

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average value of the plurality of frequencies to a threshold. The Applicant asks the Examiner to explain what is meant by "or processing circuitry".

The Applicant has amended claim 10 to further emphasize coarse synchronization on the first frequency clearly not disclosed by Sklar. The Applicant believes that claim 10 is allowable over Sklar for whatever grounds of rejection the Examiner may have used.

Regarding claim 11, the Examiner asserts wherein the processing circuitry is further adapted to: obtain a received energy pattern by observing the signal strength of the signals received on the first frequency during the sample time period (Integrator per Fig 10.20 Pg 567 or processing circuitry. The Examiner believes it would be obvious to one of ordinary skill in the art at the time of the invention calculation of the threshold takes into account signal strength for a given probability of detection)

Compare the received energy pattern to a threshold (Threshold per Fig 10.20 Pg 567) and

Determine the sample energy pattern by eliminating energy components from the received energy pattern which do not exceed the threshold (The Examiner believes that "eliminating energy components from the received energy pattern which do not exceed the threshold" has a broad meaning. The Examiner further asserts that if received signal strength which is threshold does not meet the threshold testing per Fig 10.20 Pg 567 then it is eliminated and the serial acquisition is repeated until a candidate a candidate is found per Para 10.5.1.2 per Pgs 565-568)

Regarding the Examiner's rejection of claim 11, the remarks for claim 2 apply. The Examiner is again asked to explain what is meant by "or processing circuitry". The Examiner is also respectfully asked to explain how one of ordinary skill in the art would take into account signal strength in the calculation of a threshold. Specifically what effect does signal strength have on the threshold and

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the probability of detection as applied to Figure 10.20 of Sklar? The Applicant believes claim 11 is allowable over Sklar.

Regarding claim 14, the Examiner states wherein if the first time period is determined to not be a synchronization candidate (If the Comparator determines that synchronization has not be found per Fig 10.20 per Pg 567)

then the processing circuitry is further adapted to compare the sample energy pattern to a next portion of the expected energy pattern (The processing circuitry of Fig 10.20 per Page 567 continues on a sequential search per Para 10.5.1.2 per Pgs 565-568),

the next portion of the expected energy pattern corresponding to a next time period within the time uncertainty window (The processing circuitry of Fig 10.20 per Page 567 continues on a sequential search per Para 10.5.1.2 per Pgs 565-568),,

and wherein the processing circuitry is adapted to determine whether the next time period is a coarse synchronization candidate as function of the comparison between the sample energy pattern and the next portion of expected energy pattern (The Comparator or processing circuitry determines that synchronization has not be found per Fig. 10.20 per Pg 567.

The Examiner states that Sklar does not expressly call for: Determining an expected energy pattern but teaches Threshold testing or processing circuitry.

The Examiner believes it would be obvious to one of ordinary skill in the art at the time of the invention that the expected energy pattern was used in the calculations that determined the threshold which is in processing circuitry of Sklar shown in Fig 10.20 Pg 567.

As discussed above Sklar does not disclose a first time period on a first frequency, a sample energy pattern on the first frequency, an expected energy pattern on the first frequency, etc. Claim 14 is allowable over Sklar.

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Referring to claim 15, the Examiner thinks that Sklar teaches: An apparatus for obtaining coarse synchronization in a frequency hopped/direct sequence spread spectrum (FH/DSS) time division multiple access (TDMA) data link network (Fig 10.20 Pg 567), the apparatus comprising:

Means for tuning a first receiver to a first frequency out of a plurality of frequencies used in the data link network (Frequency Hopper per Fig 10.20 Pg 567 or means for tuning)

Means for observing signal strength of signals received on the first frequency during a sample time period to obtain a sample energy pattern (Integrator per Fig 10.20 Pg 567 or means for observing)

Means for determining an expected energy pattern corresponding to a time uncertainty window, the expected energy pattern being based upon a known hopping pattern (The Integrator integrates a time interval or uncertainty time window in which the output is Threshold tested per Fig 10.20 or means for determining)

Means for comparing the sample energy pattern to a first portion of the expected energy pattern, the first portion of the expected energy pattern corresponding to a first time period within the time uncertainty window (Comparator per Fig 10.20 Pg 567 or means for comparing)

Means for determining whether the first time period is a coarse synchronization candidate as a function of the comparison between the sample energy pattern and the first portion of the expected energy pattern (Search Control per Fig 10.20 Pg 567 or means for determining)

The Examiner states that Sklar does not expressly call for: Determining an expected energy pattern but teaches Threshold testing.

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The Examiner thinks it would be obvious to one of ordinary skill in the art at the time of the invention that the expected energy was used in the calculations that determined the threshold of Sklar.

Regarding the Examiner's rejection of claim 15, the remarks above apply. Specifically, the frequency hopper of Sklar does tune a first receiver to a first frequency out of a plurality of frequencies and to many others in the frequency hopping sequence. The Examiner is asked to explain what is meant by "or means for tuning" in the rejection.

Sklar does not disclose a means for observing signal strength of signals received on the first frequency during a sample time period to obtain a sample energy pattern on the first frequency. The integrator in Sklar averages all the frequencies of the plurality of frequencies. The Examiner is asked to explain what is meant by "or means for observing" in the rejection.

Sklar does not disclose a means for determining an expected energy pattern on the first frequency. It is not clear from Sklar what time interval the integrator integrates over. The Examiner is asked to explain what is meant by "or means for determining".

Sklar does not disclose a means for comparing the sample energy pattern on the first frequency to a first portion of the expected energy pattern on the first frequency. Sklar discloses comparing all the frequency hoping frequencies. The comparator compares the filtered, detected, and integrated signal to a threshold and does not compare a sample energy pattern of several signals on the first frequency. The Examiner is asked to explain what is meant by "or means for comparing".

Sklar does not disclose a means for determining whether the first time period is a coarse synchronization candidate as a function of the comparison between the sample energy pattern on the first frequency and the first portion of the expected energy pattern on the search frequency. The search control in Sklar is used to increment the code generator and has nothing to do with determining coarse synchronization candidates. The Examiner is asked to explain what is meant by "or means for determining".

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The Applicant has amended claim 15 to further emphasis performing coarse synchronization on a first frequency. Sklar does not disclose, suggest or make obvious the Applicant's invention. Claim 15 is allowable.

The Examiner has objected to claim 4-5 and 13 under 37 CFR 1.75 for being confusing. The Examiner states that claims 4-5 and 13 use "substantially". "Substantially" has a broad meaning which is confusing as well as unclear and indefinite to the examiner.

Regarding the use of "substantially" in claims 4-5 and 13, the Examiner is asked to refer to 37 CFR 1.75 (b) where it states "More than one claim may be presented provided they differ *substantially* (emphasis added) from each other and are not unduly multiplied". The Examiner is respectfully asked to explain what "substantially" means in 37 CFR 1.75 (b) since it is unclear and indefinite.

To the Applicant "substantially" means considerably, largely, or to a great extent. The word "substantially" is commonly used in claim language as well as in 37 CFR. The Applicant believes the Examiner's objection should be withdrawn.

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CONCLUSION

The Applicant has amended claims 1, 10, 12 and 15. It is now believed that the application is in a condition for allowance. In light of the foregoing, consideration of the amended claims is hereby requested, and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

Nathan O. Jensen

Nathan O. Jensen
Attorney for Applicant
Reg. No. 41,460

Rockwell Collins, Inc.
Intellectual Property Department
400 Collins Road NE M/S 124-323
Cedar Rapids, IA 52498
Telephone: (319) 295-1184
Facsimile: (319) 295-8777
Customer No.: 26383